

APPENDIX.—SUICIDES.

1. **Suicide in Australia.**¹—The course of suicide in Australia presents certain features which call for special comment, viz.:—(i.) the constancy of the measure of the suicidal tendency; (ii.) its constancy in respect of the relative numbers of each sex; and (iii.) its periodicity according to seasons or months.

Suicide does not prominently figure among the causes of death, being only 1.166 per 10,000 of the population, and 1.13 per cent. of deaths from all causes. The suicide rate from 1858 to the present time was as follows:—

**ANNUAL RATE OF SUICIDES 'PER 10,000,000 PERSONS IN THE COMMONWEALTH,
1858 to 1910.**

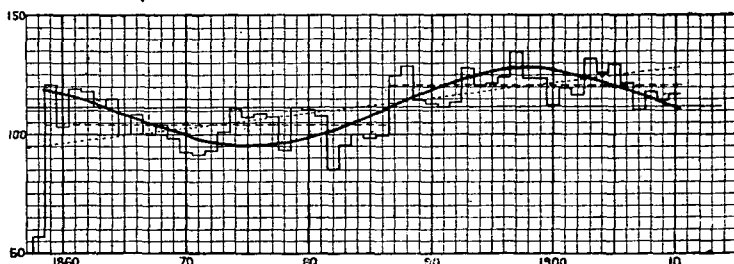
Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.	Year.	No. per 10 million.
1858	575*	1870	926	1880	1,107	1890	1,133	1900	1,125
1859	1,207	1871	917	1881	1,076	1891	1,117	1901	1,192
1860	1,037	1872	933	1882	859	1892	1,140	1902	1,170
1861	1,188	1873	1,010	1883	952	1893	1,275	1903	1,315
1862	1,179	1874	1,108	1884	995	1894	1,202	1904	1,260
1863	1,117	1875	1,077	1885	983	1895	1,217	1905	1,292
1864	1,148	1876	1,084	1886	995	1896	1,241	1906	1,214
1865	1,003	1877	1,078	1887	1,245	1897	1,350	1907	1,109
1866	1,082	1878	934	1888	1,283	1898	1,239	1908	1,174
1867	1,002	1879	1,110	1889	1,148	1899	1,233	1909	1,145
1868	1,041	1880	1,107	1890	1,133	1900	1,125	1910	1,166
1869	981								
Mean	for whole period	...	...	...	...	...	...	...	1117.6

1. The information is obtained from an article with the title "Suicide in Australia: a Statistical Analysis of the Facts." By G. H. Knibbs, C.M.G., etc. Journal Royal Society N.S.W., volume xiv., pp. 225-246, to which reference should be made for details.

NOTES.—1858-9, State of Victoria only; 1860 to 1866, States of New South Wales and Victoria; 1867 to 1872, States of New South Wales, Victoria, and South Australia; 1873 to 1886, Queensland and Tasmania also included; 1887 to 1910, All the States of the Commonwealth. * The result for 1858 is abnormal.

This change of frequency is indicated in the following diagram:—

SECULAR FREQUENCY OF SUICIDE IN AUSTRALIA.



EXPLANATION OF GRAPH.—Each vertical division represents five suicides per annum per million of the general population, and each horizontal division denotes one year. The rectangular lines shew the actual observed group-rate of suicide for the years 1858 to 1910. The general mean is shown by a firm horizontal line, and the two horizontal broken lines shew the averages for the period 1859 to 1886 and for the period 1887 to 1910. The fine inclined dotted line shews the general trend of the frequency for the period 1889 to 1910, if that trend be regarded as linear in character. The heavy curved line shews the general trend on the assumption that it tends to be periodic, which assumption agrees more closely with the observed frequency than the assumption of a linear trend.

The aggregate number of suicides in the whole period 1859 to 1910 inclusive was 15,242, and since the sum of the annual populations was 133,136 millions, the actual mean rate of suicide for the whole period was 114.48 per million per annum. The average of the annual numbers per million is only 111.76, hence this is the mean tendency to commit suicide about which fluctuations take place from year to year. In respect of differences from the curve shown in the diagram representing the probable general trend of the phenomena, it may be noted that the relatively large increase which characterised 1887 and 1888 synchronised approximately with a period of excessive speculation, viz., the days of the silver and land booms. The large value for 1893 corresponded to the bank failures and collapse of the land boom. The high value for 1897 to some extent followed the incidence of drought conditions, viz., in 1895 and subsequent years.

The low value for 1900 synchronised with the South African war, when many men were drawn from Australia for military service in South Africa. The high values for 1903, 1904, and 1905, corresponded to the period of the most serious drought in Australia.

Practically the frequency of suicide for the whole of the period 1859 to 1886 was under the general average frequency, and for the whole of the period 1887 to 1910 it was above the average for Australia. The mean frequency per 1,000,000 population for 1859 to 1886 inclusive was 104.04 and from 1887 to 1910 inclusive was 120.78. But a reference to the figure will shew that the assumption of a slow linear progression* does not really satisfactorily accord with the facts. The general trend is, however, well exhibited by the curve shown by the heavy firm line. This has a 46-year period, and can be expressed by a formula† showing a fluctuation reaching a maximum of only 15%.

It is perhaps remarkable that the rate for Australia should exceed that for England and Wales, and greatly exceed that for the United Kingdom taken as a whole; and, seeing that the race element is identical, since Australia is almost wholly of British origin, the fact seems worthy of further investigation.

From 1881 to the present time (1910), the countries whose suicide rates most closely approximate to that of Australia, are Sweden and Belgium.

The great range of frequency, viz., from Ireland, with only 34 per million, to Switzerland, with, say, 230—nearly seven times the frequency for Ireland—is worthy of note; also that Australia occupies approximately the mean position between these extremes. Mere geographical position on the earth's surface, or average annual temperature, etc., has apparently no marked influence on the suicidal frequency, and it would seem also that the influence of race is negligible. Probably social and economic conditions are the most potent factors governing the phenomena of suicide.

Respecting the question whether the suicidal tendency is or is not growing, it may be pointed out that it is clear, from the table on the following page, that there is a fairly steady increase in the frequency of suicide in the civilised world. The general result, given in the last line of the table, shews that suicide is decidedly on the increase, but also that the rate of increase is steadily diminishing. The result can be expressed by a formula.‡

* Such a progression would be represented by the formula $S = 111.8 + 0.65 (T - 1884)$, and is shown in the figure by the dotted straight line.

† Viz.:
$$S = 111.8 + 16.7 \sin 2\pi \frac{T - 1886}{46}$$

In the formula S is the number of persons annually committing suicide for an Australian population of 1,000,000, and T is the year in question.

‡ The number of suicides per million per annum (S) for the civilised world generally would appear to be roughly given for any year by the expression

(3) $S = 112 + 2.2 (T - 1873) - 0.022 (T - 1873)^2$
in which T is the year in question. This would imply that the rate per million per annum (dS/dT) is increasing, as expressed by the following formula, viz.:

(4) $dS/dT = 2.2 - 0.044 (T - 1873)$;
which gives for the rate of increase per million per annum for 1873, 2.20, and for 1910 only 0.57—a very considerable reduction of the rate of increase, and one which indicates that there is some likelihood of the increase ceasing altogether.

The average rate of suicide for the period 1859 to 1910 of 111.8 per million does not exceed very greatly the rate for England and Wales. For comparison the results are given for various countries for successive quinquennia from 1871 onwards, and are as follows :—

SUICIDE RATES PER MILLION INHABITANTS FOR VARIOUS COUNTRIES.¹

Country.	Period.							
	1871 to 1875	1876 to 1880	1881 to 1885	1886 to 1890	1891 to 1895	1896 to 1900	1901 to 1905	1906 to 1910
Bosnia and Herzegovina ...	...	...	...	6	19	37	40	...
Ireland ...	18	18	22	24	29	29	33	34 ^e
Italy ...	35	41	49	50	57	63	63	...
Scotland ...	33	47	53	58	60	60	60	57 ^e
Finland ...	29	33	39	40	48	47	55	...
Servia ...	...	...	38	37	36	40	51	...
Netherlands ...	36	44	53	56	61	55	64	...
Norway ...	75	72	67	67	65	55	64	...
Rumania ...	...	...	...	42	55	70	...	...
England and Wales ...	66	74	75	79	89	89	103	102 ^f
Australia ...	100.9	106.3	97.3	116.1	119.0	123.7	124.5	116.2
Belgium ...	70	94	107	119	129	119	124	...
Sweden ...	81	92	97	118	144	119 ^a	124	...
Austria ...	106	162	162	160	159	158	173	...
Hungary, Kingdom... ..	...	...	84	102 ^b	123 ^c	163	176	179 ^e
Hungary, proper ...	...	76 ^d	89	108 ^b	132 ^c	177	191	192 ^e
Japan ...	...	110 ^d	146	159	179	185	201	189 ^e
German Empire ...	...	...	211	205	211	202	212	...
Denmark ...	243	267	248	261	250	221	227	194 ^f
France ...	144	168	194	216	241	232	228	...
Switzerland ...	...	227	233	221	222	222	232	227 ^f
General result ...	112	122	133	139	151	152	160	158 ?

1. See Statistik und Gesellschaftslehre. Prof. G. v. Mayr, Bd. III., p. 279.

^a This sudden decrease is due to the fact that cases of death by poisons self-administered for purposes of abortion have been excluded.

^b For 1886-7. ^c For 1892-5. ^d For 1878-80. ^e For 1906-08. ^f For 1906-09.

It is a remarkable fact that in the western world the frequency of suicide among men ranges from double to quintuple the frequency among women, while in India and Burmah the relation is reversed, that is, suicide is more frequent there among women than men.

For Australia, for the four decennia between 1871 and 1909 inclusive (omitting West Australian suicides, for which figures are not available till 1896), the results are as follows :—

SUICIDES IN THE COMMONWEALTH, 1871-1909.

Years.	Males.	Females.	Total.	Males. (Per 1000 of Total Suicides.)	Females. (Per 1000 of Total Suicides.)
1871-1909 ...	11,051	2,250	13,301	831	169
1900-1909 ...	3,992	811	4,803	831	169

This constancy of relation of 83.1% males and 16.9% females, approximately true for each decennium, shews that in the Commonwealth of Australia 4.92 males commit suicide for each female who commits that act, a ratio that is exceeded by only one country—Switzerland. The relative number of males and females has, however, varied. If allowance be made for this we have—

Years 1871-1909 ...	825 males	175 females per 1000
1900-1909 ...	830 „	170 „ „

For comparison, the crude ratios are given in the following table:—

TABLE SHEWING CRUDE RATIO OF MALE TO FEMALE SUICIDES IN VARIOUS COUNTRIES.

Country.	Period	Ratio.	Country.	Period.	Ratio.
Japan ...	1881 - 1905	1.65	Prussia ...	1881 - 1905	3.80
Servia ...	1881 - 1905	2.06	German Empire ...	1881 - 1905	3.85
Scotland ...	1881 - 1905	2.52	Norway ...	1881 - 1905	3.85
Rumania ...	1891 - 1900	2.68	Sweden ...	1881 - 1905	3.91
Bulgaria ...	1896 - 1905	2.96	Netherlands ...	1881 - 1905	4.05
England & Wales ...	1881 - 1905	2.98	Italy ...	1881 - 1905	4.05
Scotland ...	1896 - 1905	3.00	Spain ...	1881 - 1905	4.22
Ireland ...	1881 - 1905	3.00	Finland ...	1881 - 1905	4.31
Russia... ..	1881 - 1890	3.38	Sweden ...	1901 - 1905	4.59
France ...	1881 - 1905	3.55	Belgium ...	1881 - 1905	4.93
Austria ...	1881 - 1905	3.58	Australia ...	1881 - 1905	4.95
Denmark ...	1881 - 1905	3.62	Switzerland ...	1881 - 1905	5.22

INDIA, &c., 1907.

Country.	Ratio.	Country.	Ratio.
Burmah	1.16	East Bengal and Assam ...	0.67
Central Provinces	1.00	Eastern Territory	0.59
Bombay	0.92	Bengal	0.57
Punjab	0.79	North West Provinces ...	0.55
Madras	0.74	Agra and Oudh	0.34

The figures in the lower table above are for India and Burmah, where generally there are more female than male suicides. This fact illustrates the great difference between the social condition in the two civilisations.

Since the relative number of males and females differs in each country, the crude rates are not *quite* satisfactory.* The comparisons of the suicides within the various age-groups shew the progression of suicidal tendency through the different stages of life.

* What has been called the corrected frequency relation, does not yield very different results. (See Op. cit. pp. 233, 234.)

**NUMBER OF PERSONS PER MILLION OF EACH AGE-GROUP AND EACH SEX
COMMITTING SUICIDE—VARIOUS COUNTRIES.***

MALES.

Age-group.	Austria, 1896-1901.	Baden, 1891-1905.	Buenos Ayres, + 1899-1908.	Denmark, 1886-1905.	France, 1893-1906.	Italy, 1901-1905.	Massachusetts, 1876-1885.	Prussia, 1891-1905, 1908.	Saxony, 1903-1907.	Sweden, 1891-1907.	Australia, 1891-1910.	† Simple Mean including Australia.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
10-14 ...	2	20	4	36	28	5	2	31	53	—	5	18
15-19 ...	165	161	175	144	161	71	35	186	341	42	32	134
20-24 ...	330	317	233	291	277	166	103	331	442	170	119	255
25-29 ...	384	376	264	313	374	138	136	315	482	238	190	295
30-39 ...	313	380	212	431	364	126	159	396	505	313	272	326
40-49 ...	423	594	276	700	537	165	230	654	929	442	403	508
50-59 ...	566	870	193	1112	726	208	365	880	1297	574	563	716
60-69 ...	585	987	187	1183	869	223	445	951	1589	588	602	802
70-79 ...	621	1086	187	1284	909	210	551	942	1664	554	556	838
80 ...	621	1408	187	1210	954	202	264	1105	2780	468	443	946

FEMALES.

	1	11	4	6	21	1	2	8	26		4	8
10-14 ...	1	11	4	6	21	1	2	8	26		4	8
15-19 ...	92	57	235	82	131	34	16	98	192	20	40	76
20-24 ...	130	74	206	127	170	48	31	115	177	52	68	99
25-29 ...	122	80	120	94	244	40	43	90	160	54	53	98
30-39 ...	82	120	78	89	338	37	53	97	149	56	76	100
40-49 ...	86	149	56	178	342	37	56	134	243	84	86	140
50-59 ...	99	139	25	226	444	43	64	175	338	114	88	173
60-69 ...	99	184	25	279	515	42	82	193	302	115	87	190
70-79 ...	147	171	25	270	528	46	55	215	437	91	91	205
80 ...	147	171	25	386	526	38	24	259	557	89	57	225

* The results, excepting for Australia, are computed from the data furnished in the work of Prof. G. v. Mayr, of Munich. Op. cit. Bd. III., pp. 313-316.

† Buenos Ayres not included in mean.

The suicidal frequency per million for each five-year group in Australia, based on the records of the last two decades,¹ is as follows:—

SUICIDES PER MILLION IN EACH AGE GROUP AND SEX—AUSTRALIA,

1891 TO 1910.

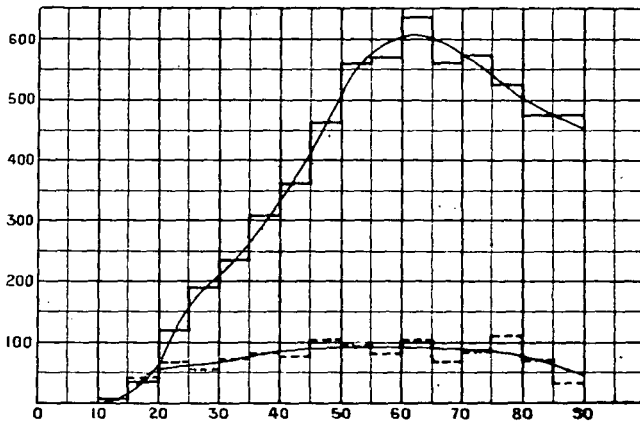
Age-group.	Males.	Females.	Age-group.	Males.	Females.
10-14	5	4	50-54	559	94
15-19	32	40	55-59	569	81
20-24	119	67	60-64	637	102
25-29	190	53	65-69	560	69
30-34	235	71	70-74	573	82
35-39	309	81	75-79	524	109
40-44	361	76	80-84	474	70
45-49	461	102	85	475	32

¹ These are computed on the basis of the age constitution at the 1901 Census, which is sufficiently accurate for the purpose in view.

These numbers disclose the frequency of suicide at different ages, and thus the age at which the tendency is most strongly expressed. Since the total number of persons in any age-group ordinarily diminishes with increase of age, and differs both from period to period as well as from country to country, the absolute numbers of suicides at various ages are of little interest; it is the relative numbers which are significant. The absolute numbers have therefore not been given.

The characteristic difference between the suicidal tendency in males and in females is shewn in the following diagram:—

FREQUENCY OF SUICIDE ACCORDING TO AGE.
UPPER CURVE, MALES. LOWER CURVE, FEMALES.



EXPLANATION OF GRAPH.—Each horizontal division denotes five years of age, and each vertical division denotes fifty suicides per annum per million of the population of the corresponding sex and age. The upper rectangles denote the observed frequency per annum per million males of each quinquennial age-group, and the lower rectangles denote the observed frequency per annum per million females of each quinquennial group. The two curves denote the probable instantaneous values for any age between the limits 0 to 90, the upper being for the male sex, the lower for the female sex, the ordinates thereto being per million per annum of the corresponding sex.

For males the increase of frequency is almost linear from fifteen to fifty-five years of age. The maximum frequency is about sixty-two, after which the frequency decreases decidedly, but not as quickly as it increases for earlier ages. Italy and Sweden shew a similar decrease of frequency, the maximum being between the ages sixty and seventy, so also do Massachusetts and Buenos Ayres.

It would appear that the measure of the stress of life is special to each country, and that, measured against the capacity to endure this stress, it falls off in Australia at the age of about sixty to sixty-five for men, becoming even at ninety as small as it was at forty-seven for that sex. It also distinctly decreases for the later years of life, for women. It is further worthy of note that the average frequency among Australian women never reaches, at any period of life, the average frequency at the age of twenty-three among men.

There is a well marked seasonal fluctuation of suicide. This fluctuation is perhaps best shewn by computing for a period of years how many persons commit suicide per month, correcting the crude results so as to equalise the months in respect of their duration and total population. The results are:—

MONTHLY FREQUENCY OF SUICIDE, AUSTRALIA.

Month.	Numbers per 100,000,000 of Population.				Numbers per 10,000 Suicides.			
	N.S.W. and Queensl'd 1890-1899. Persons.	All States of Australia, 1900-1910.			N.S.W. and Queensl'd 1890-1899 Persons.	All States of Australia, 1900-1910.		
		Males.	Females.	Persons.		Males.	Females.	Persons *
January ...	1,163	1,797	357	1,108	859	935	842	920
February ...	1,053	1,636	421	1,057	777	853	994	878
March ...	1,019	1,661	366	1,041	752	866	864	865
April ...	956	1,540	413	1,002	706	803	975	832
May ...	1,072	1,520	352	962	792	792	831	799
June ...	1,002	1,398	265	857	740	729	625	712
July ...	954	1,476	321	922	704	769	758	766
August ...	1,221	1,548	380	990	902	807	897	822
September ...	1,080	1,502	318	936	798	783	751	778
October ...	1,284	1,698	393	1,074	948	885	928	892
November ...	1,227	1,622	307	992	906	845	725	824
December ...	1,512	1,790	343	1,098	1,116	933	810	912
	13,543	19,188	4,236	12,039	10,000	10,000	10,000	10,000

* For result for 1890 to 1910 see table hereinafter.

There is a distinct seasonal fluctuation; it is, however, apparently not identical from decade to decade, and from the last three columns it is evident that the curve is by no means identical for the sexes. For the purpose of comparison the result for a long series of observations in various European countries, and the corresponding results for Australia for 1890 to 1910, are given. These shew in a general way that the seasonal relationship of the maximum frequency is identical in Australia with that of the Northern Hemisphere, the absolute difference between approximately 6 months.

The Australian figures for the last 21 years are based on two States for the first ten years and on all for the last eleven years. All results are corrected to equalise the months, etc.

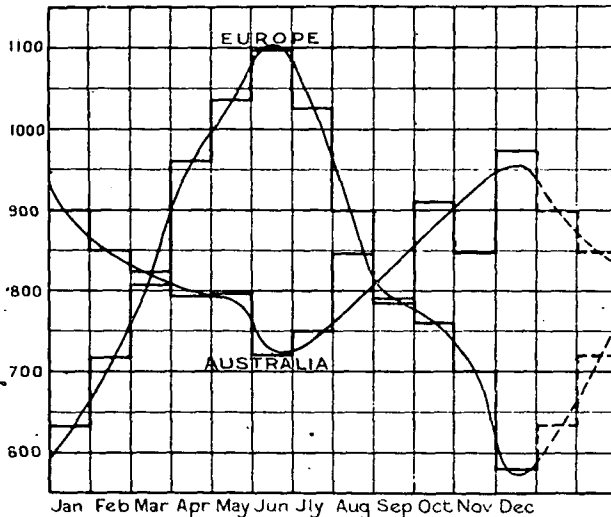
NUMBER OF SUICIDES OCCURRING IN EACH EQUALISED MONTH IN
10,000 SUICIDES.

	France *	Prussia.	Saxony	Württemberg.		Baden.	Switzerland.	Italy.	Denmark.	Simple Mean.	Australia.†	
	1827 to 1876	1885 to 1900	1875 to 1889	1846 to 1879	1889 to 1893	1881 to 1900	1884 to 1893	1864 to 1876	1896 to 1905			1890 to 1910
January...	690	625	629	547	658	676	637	610	618	632	July ...	749
February...	719	688	696	805	742	664	744	771	629	718	August ...	846
March ...	851	803	817	848	800	864	749	827	713	808	Sept. ...	784
April ...	955	982	987	896	983	903	973	995	964	960	Oct. ...	910
May ...	1,018	1,016	1,040	998	1,009	972	1,025	1,121	1,135	1,037	Nov. ...	848
June ...	1,092	1,053	1,068	1,134	950	1,059	1,078	1,216	1,207	1,097	Dec. ...	973
July ...	1,053	997	1,010	1,063	9-3	991	1,039	1,023	1,072	1,026	Jan. ...	900
August ...	871	907	927	961	892	896	871	868	893	898	Feb. ...	849
Sept. ...	757	836	813	769	833	805	832	714	740	789	March...	832
October ...	744	787	758	742	775	803	810	641	762	758	April ...	793
November	643	692	664	717	867	730	659	610	688	697	May ...	796
December	607	612	571	520	508	637	583	604	579	580	June ...	720
	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000		10,000

* Computed approximately from results given in Prof. v. Mayr's work (*Op. cit.* p. 262.)

† New South Wales and Queensland only for 1890 to 1899, and all States of Australia from 1900 to 1910 inclusive.

ANNUAL FLUCTUATION IN THE FREQUENCY OF SUICIDE.



EXPLANATION OF GRAPHS.—The horizontal divisions denote not calendar but equalised months and the vertical divisions denote 50 suicides per month out of an assumed total of 10,000 per annum (833½ per month). The rectangular lines denote the group results for the equalised months on the basis assumed. The upper curve denotes the probable instantaneous values for the whole of Europe, the lower the probable instantaneous values for the whole of Australia. The results are so corrected as to correspond to a population constant throughout the year.

In the diagram the rectangular lines shew the rates for the various months for Australia and Europe generally, and the curves give the most probable form of the fluctuation.

If the monthly mean temperatures of the capital cities of Australia be weighted in proportion to the populations, the resultant mean is as follows:—

Month	...	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. Fahr.	...	71.1	70.7	68.4	63.5	57.7	53.6	51.8	54.1	57.7	61.8	65.6	69.0

These results may be regarded as approximately representing the temperature conditions influencing the rate of suicides owing to the fact that the populations of the cities have a preponderating influence. The frequency of suicide can be expressed by a formula depending on this average temperature.*

The remarkable correlation between temperature and suicide frequency is best seen by combining the results for pairs of months. In this way we obtain the two upper lines in the following table:—

		Dec. Jan.	Feb. Mar.	April. May.	June. July.	Aug. Sept.	Oct. Nov.
Temperature, Fahr.	...	70.0	69.5	60.6	52.7	55.9	63.7
Suicides per 10,000	...	1,832	1,743	1,631	1,478	1,600	1,716
Calculated	...	1,805	1,796	1,645	1,511	1,565	1,698

* See Journal Royal Society N.S.W., volume xlv., p. 109. The frequency (q) of suicide per million per diem in Australia can be put in the form

$$q = 0.33 + 0.003 t$$
where t is the temperature above 62° Fahr.

† This correlation is very approximately expressed by $615 + 17t$ (where t is the temperature Fahrenheit), a formula which gives results in the last line.

It may be pointed out that Australia differs very remarkably from Europe in this respect, viz., that the range of temperature throughout the year is decidedly smaller in Australia. Thus a mean for the various countries of Europe gives the range between the averaged hottest and coldest months of the year about 33° Fahr., while for Australia the range is only about 19°, i.e., but little more than half. We thus have:—

Ranges				In Temperature.	In Suicide Frequency.
In Europe ... ..	...	...	...	33° Fahr.	517
In Australia ... ..	...	...	...	19° ..	253

That is to say, the variation in the suicide frequency on the whole corresponds very closely to the range in temperature, being strongly marked where the temperature differences are strongly marked. It is evident from this that large temperature fluctuations tend to bring about large changes in the frequency of suicide.

7. *Mode of Suicide.* In a relatively small population the number of suicides for individual years by any particular mode of self-destruction is naturally variable, nevertheless there is a greater uniformity than might have been anticipated *a priori*. The statistics have been computed for the years 1907 to 1910 inclusive.

These results shew that the mode of suicide is very regular. The relative frequency of any particular mode is best seen by the number represented by each class in a given aggregate, say, 100, 1000, or 10,000.

**RELATIVE NUMBER PER 10,000 SUICIDES OF EACH SEX, AND OF BOTH SEXES,
DYING BY PARTICULAR MODES IN AUSTRALIA DURING THE PERIOD 1907 TO 1910.**

Mode.	Males.	Females	Persons.	Mode.	Males.	Females	Persons.
Poisoning	1,806	4,545	2,280	Precipitation from height	123	89	117
Asphyxia	31	...	25	Crushing	135	147	137
Hanging	1,707	1,349	1,646	Other modes	369	293	356
Drowning	823	2,082	1,041	Total	10,000	10,000	10,000
Firearms	3,360	645	2,890				
Cutting, etc.	1,646	850	1,508				

In Australia poison and drowning are resorted to two and a-half times more frequently by women than by men; suicide by cutting is resorted to twice as often, and by shooting five times as often, by men as by women.

The preceding results may be compared with those of a few other countries. For example:—

**RELATIVE NUMBER OF PERSONS IN 1000 OF EACH SEX RESORTING TO
PARTICULAR MODES OF SUICIDE.**

Country.	Period.	Hanging.		Drowning.		Shooting.		Poisoning.		Cutting.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Russia	1904-1908	573	396	122	312	194	32	52	166	?	?
Japan	1902-1907	623	444	184	430	24	3	27	25	39	27
Servia	1902-1906	341	619	98	71	415	239	73	9	49	53
Australia	1907-1910	171	135	82	208	336	64	181	455	165	85

The comparison discloses for each sex the great diversity of frequency in resorting to particular modes of self-destruction. The results are equally diversified when the total number of suicides is considered (irrespective of sex). These total results may be compared with those of a number of other countries for several forms of suicide, viz., by hanging, drowning, shooting, and cutting. The following table furnishes the relative numbers:—

**RELATIVE NUMBER OUT OF A TOTAL OF 1000 SUICIDES DYING BY HANGING,
DROWNING, SHOOTING, OR CUTTING.**

VARIOUS COUNTRIES.

Country.	Period.	Mode of Suicide.			
		Hanging.	Drowning.	Shooting.	Cutting.
Australia	1907-1910	165	104	289	151
Austria	1887-1891	444	259	173	?
Bavaria	1887-1890	536	203	208	?
Belgium	1889-1893	492	249	155	19
Denmark	1896-1900	749	130	54	13
England	1889-1893	277	227	93	182
France	1887-1891	435	260	125	24
Italy	1889-1893	167	232	254	41
Norway	1888-1890	656	172	78	47
Prussia	1891-1900	586	184	129	23
Saxony	1891-1900	598	196	117	20
Sweden	1889-1893	495	154	140	56
Württemberg	1890-1899	589	158	152	27

It is remarkable in cases of suicide that what would *a priori* seem to be negligible factors should really have weight. Thus it is shewn that cold acts as a well-defined deterrent in respect of suicide by drowning.

The following conclusions are indicated by the results:—

- (i.) The relative frequency of suicide in Australia is very constant.
- (ii.) There is apparently a secular oscillation of 46 years period and of relatively small amplitude, viz., 15 per cent. The existence of this cannot be decisively determined till another half century has elapsed.
- (iii.) While economic conditions express themselves in the frequency of suicide, their effects are relatively small, and are comparable in magnitude only with the regular annual fluctuation. In a half century's experience the greatest deviations from the mean are - 15 per cent. to + 21 per cent., and from the oscillation of 46 years-period less than 14 per cent. either way.
- (iv.) Australia occupies a medium place in a list of frequency of suicides for all countries.
- (v.) The annual fluctuation in Australia (fluctuation from month to month) is well marked, but is only about half of that in Europe. It ranges between - 14 per cent. to + 10 per cent.

(vi.) In Europe the mean temperature range, between the hottest and coldest months, is about 33° Fahr. and in Australia it is only 19° Fahr., say 57 per cent. of that of Europe; the range of suicide frequency during the year is similarly only about 50 per cent. of that of Europe.

(vii.) The annual fluctuation stands in the same relation to the seasons, *i.e.*, the maximum and minimum frequencies in Europe are in the months June and December respectively, and in Australia in the months December and June.

(viii.) It would appear from this that the annual temperature fluctuation or some unknown phenomenon associated therewith has a profound influence on the frequency of suicide.

(ix.) Suicide is on the increase for the world generally, but the rate of increase is diminishing.

(x.) It may be stated that there is a fairly well marked increase in the frequency of suicide in Prussia for the ages 15 to 25, *viz.*, the intensive educational period of life.

(xi.) In Australia, frequency of suicide at first increases with age, attaining with men a maximum at about age 62, after which it declines. With women it never attains in the western civilised world or in Australia a comparable magnitude to the frequency in the case of men, but exhibits in a less marked way the tendency to increase with age to a limit and then to decline.

(xii.) The western civilised world stands in startling contrast with the east, and especially with India in this respect, where female suicide preponderates. Even in Japan the frequency of female suicides is large compared with any European country.

(xiii.) The mode of suicide shews considerable constancy, and is apparently influenced by physical conditions.

§ 4. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 253 and 254), shewing these fluctuations from 1860 to 1910, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increases of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 254), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table on the following page shews the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries, Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.